

On the Road ... to an Iceless Arctic



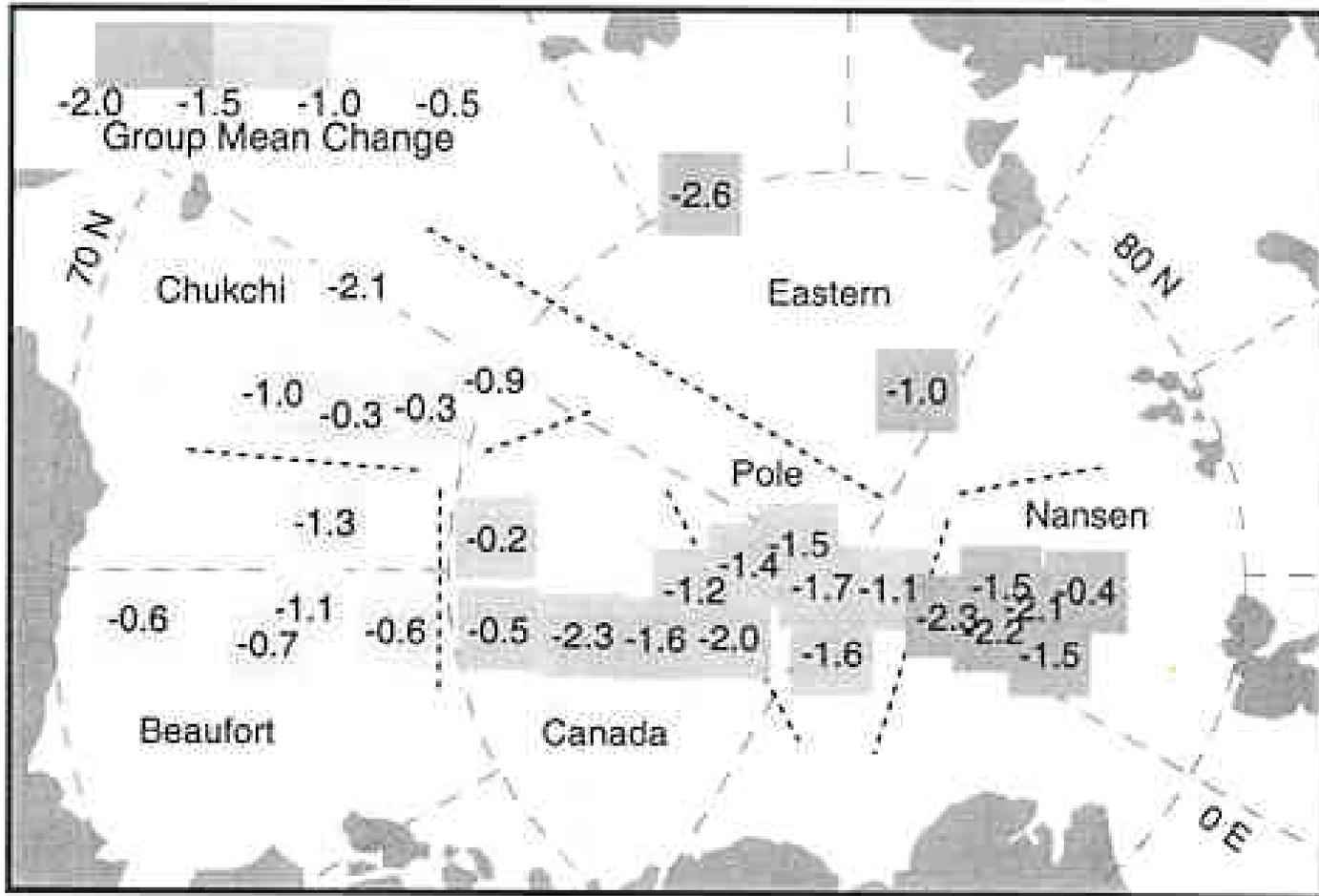
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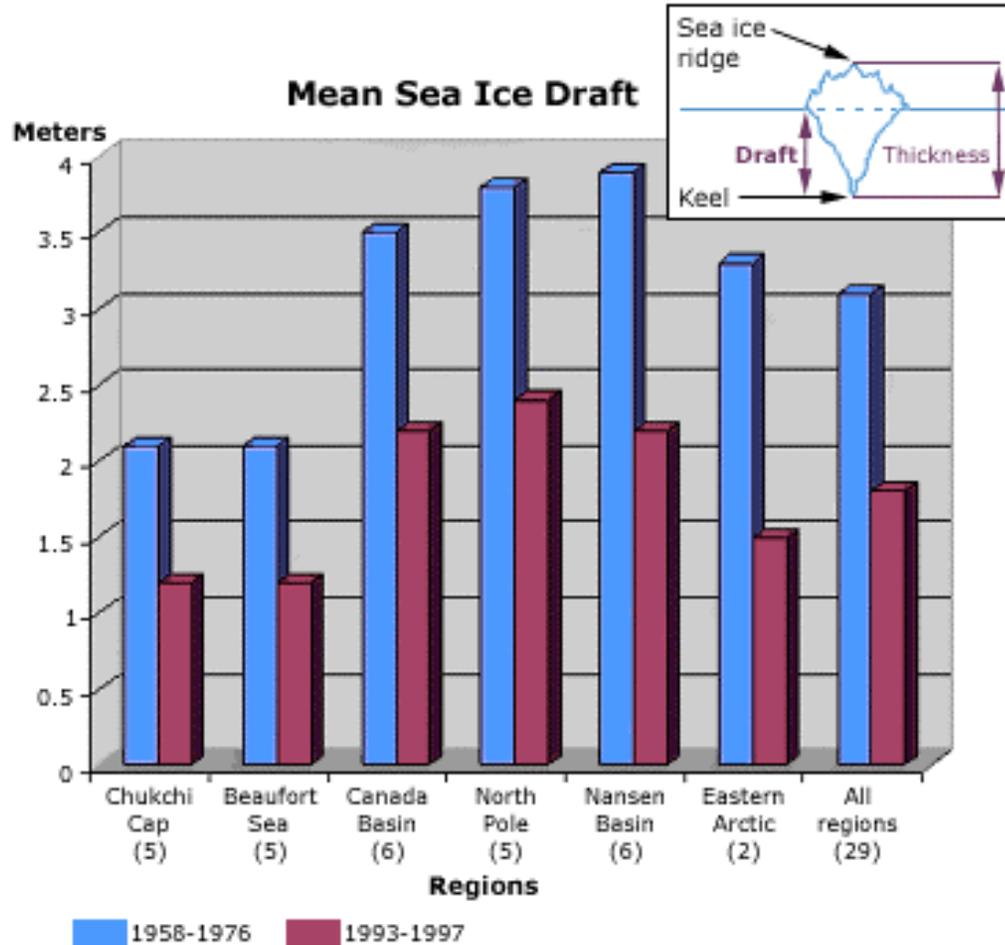


Sea Ice Thickness Decrease



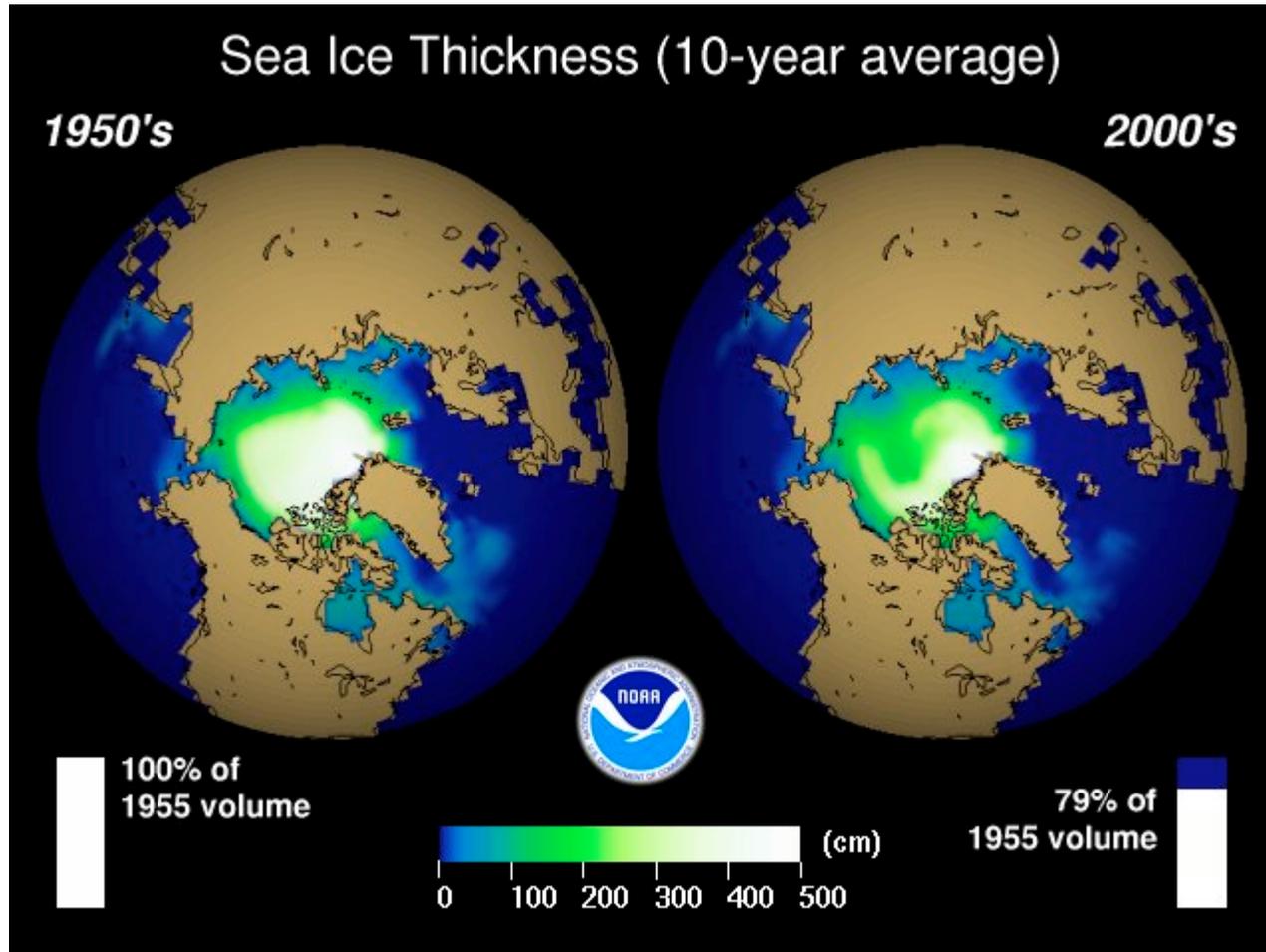


Sea Ice Thickness Decrease





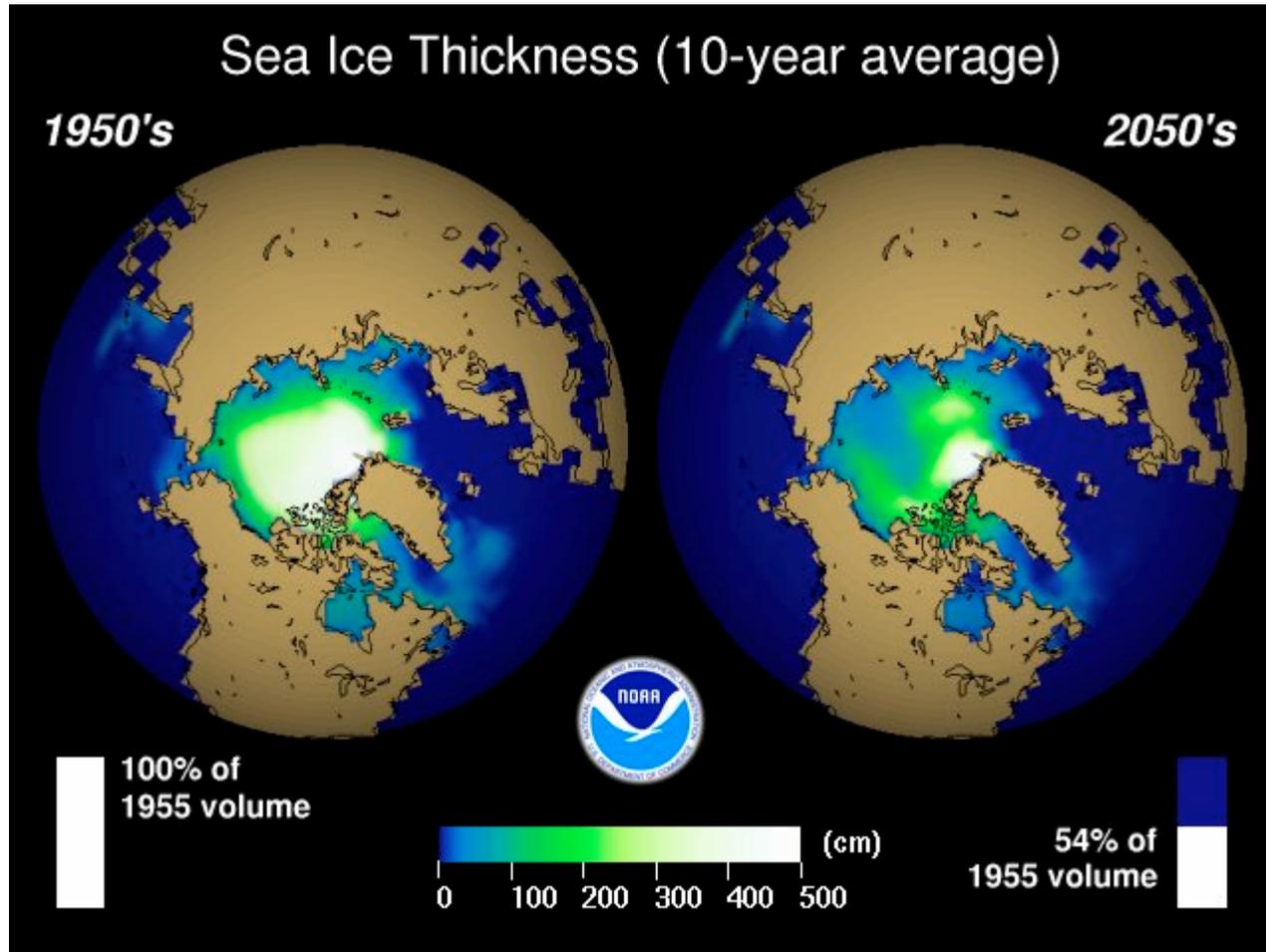
Projected Thickness Decrease



Geophysical Fluid Dynamics Laboratory, Princeton, NJ



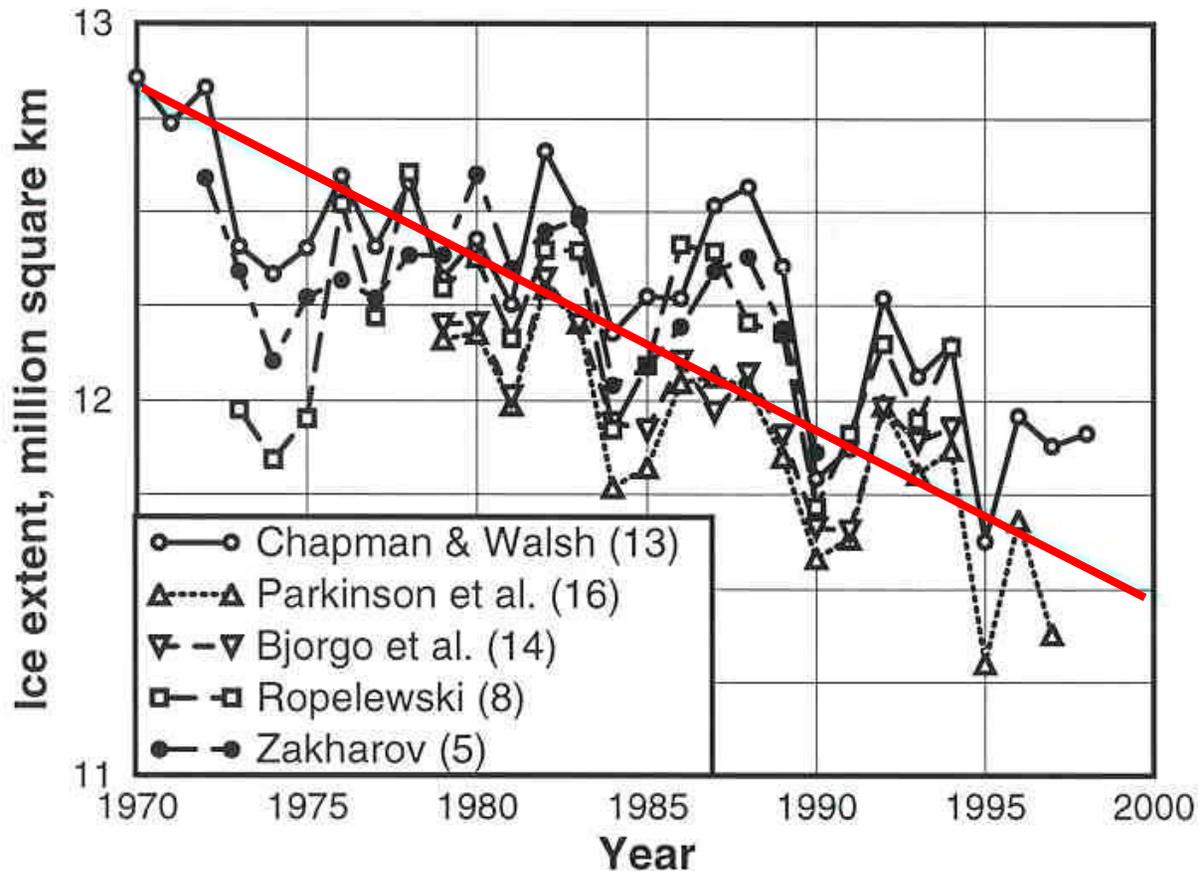
Projected Thickness Decrease



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Observed Sea Ice Extent Decrease



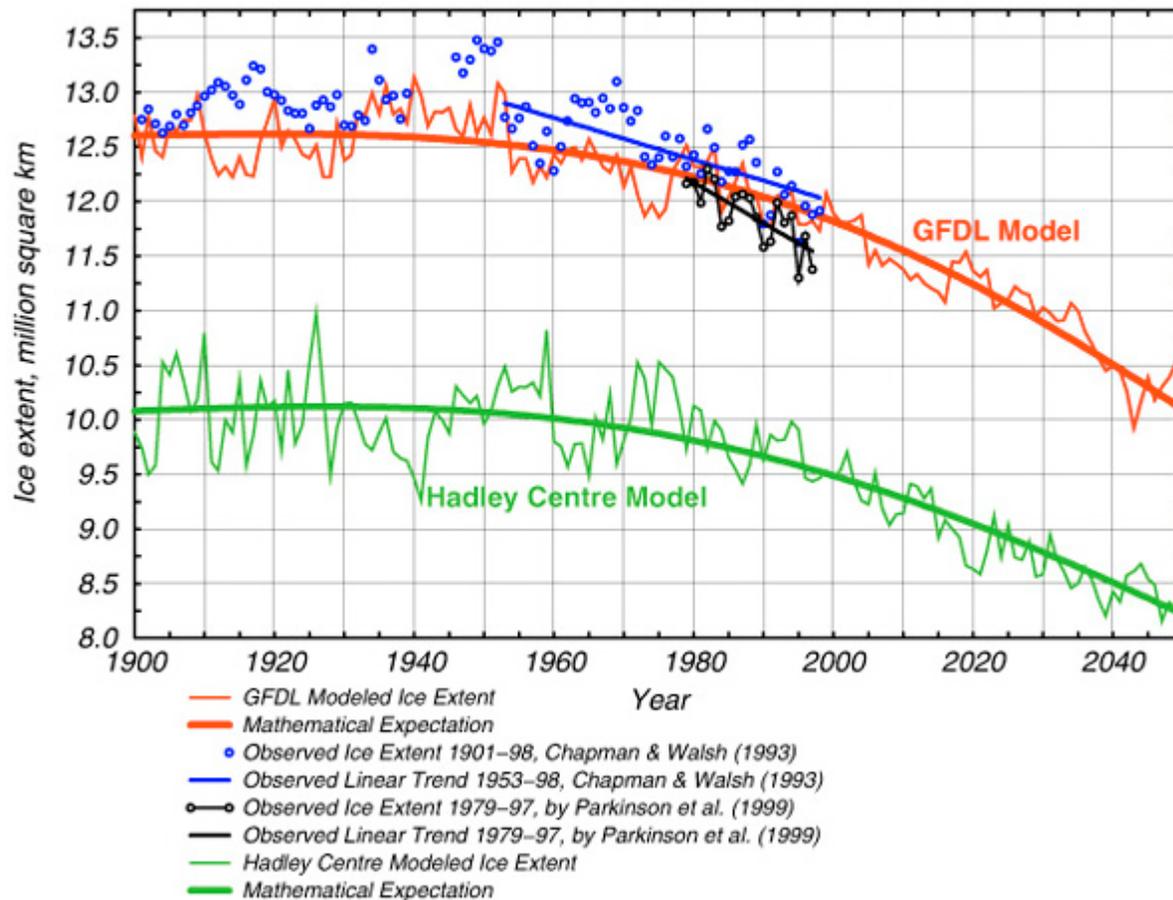


Projected Sea Ice Extent Decrease



N. Hemisphere Sea Ice Extent. Annual Averages

GFDL and Hadley Centre Climate Models and Observations

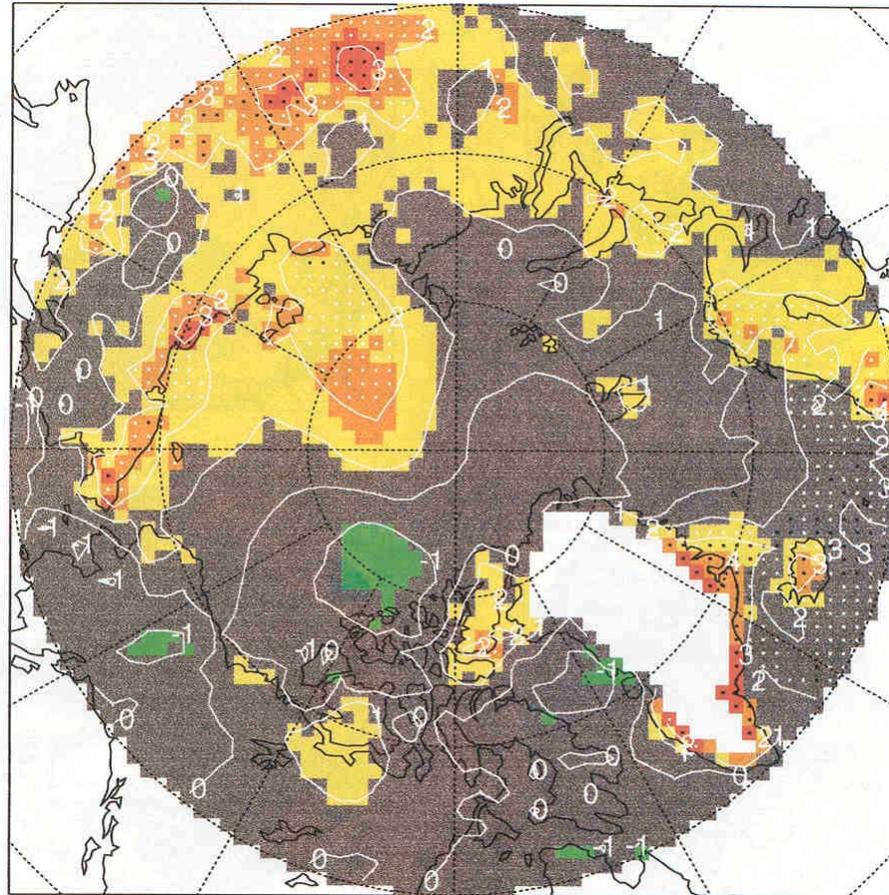


Vinnikov et al., 2000



Air Temperature Trends

Annual SAT trends in the Arctic, 1979-1997



Symposium Objectives

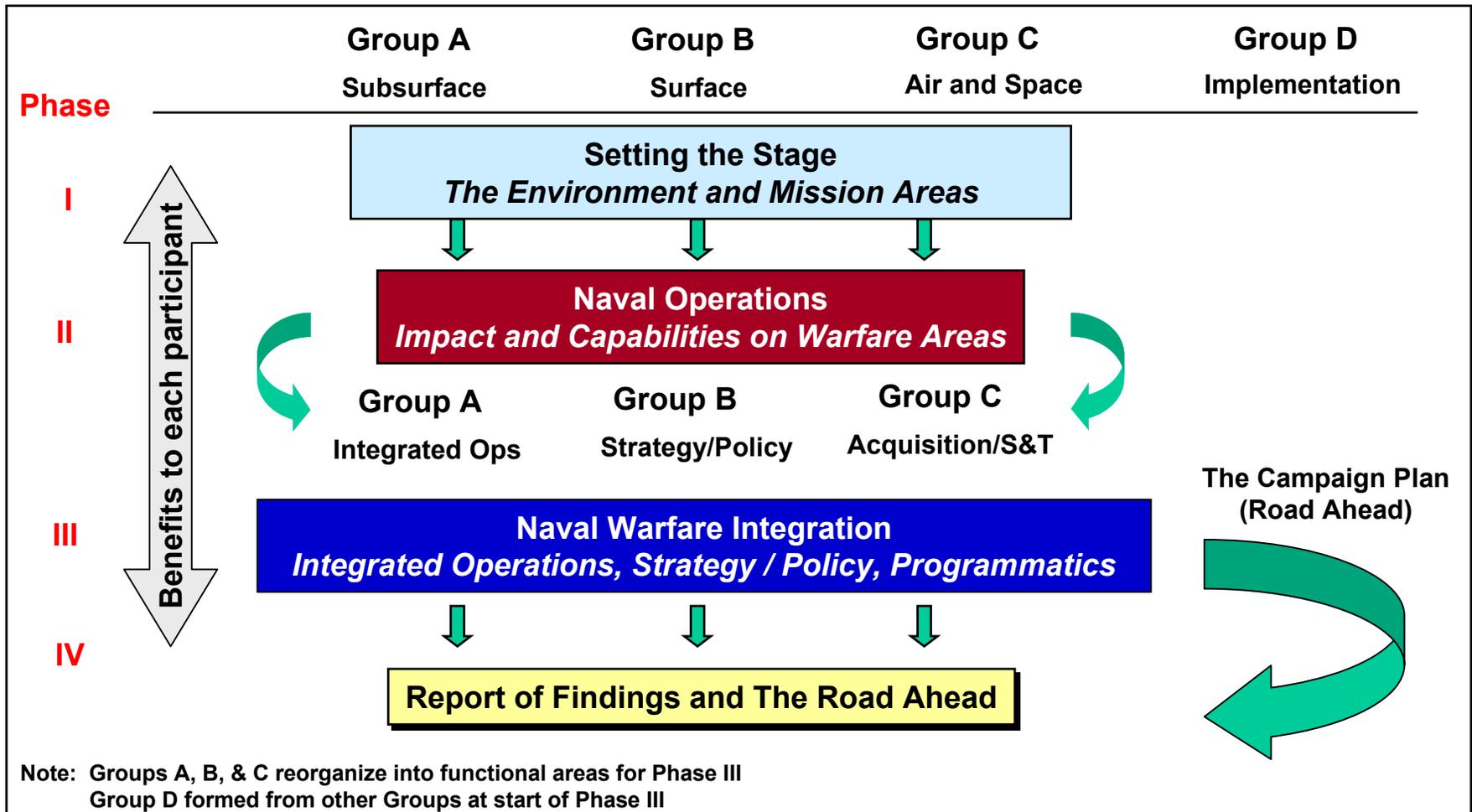
- Identify potential opportunities for future naval operations for a given projected retreat of the Arctic ice cover
- Examine potential impact/effects on such operations and identify baseline capabilities for operating in this altered Arctic environment
- Explore the strategic and policy issues that could elicit a strategic (military) response due to the Arctic being ice-free during a portion of the year
- Establish the criteria and key elements for a continuum of heightened awareness and participation in examining operations in the altered Arctic environment (beyond DOD)

Symposium End State

- Broader constituency for impact on naval operations in the navigable Arctic environment
- Increased awareness on behalf of warfighters, acquisition representatives and S&T community for type of capabilities needed in this environment
- Identification of continuum (a campaign plan)
- End products
 - Final report
 - Executive briefing
 - Article

Focus Groups

Naval Operations in a Navigable Arctic Environment

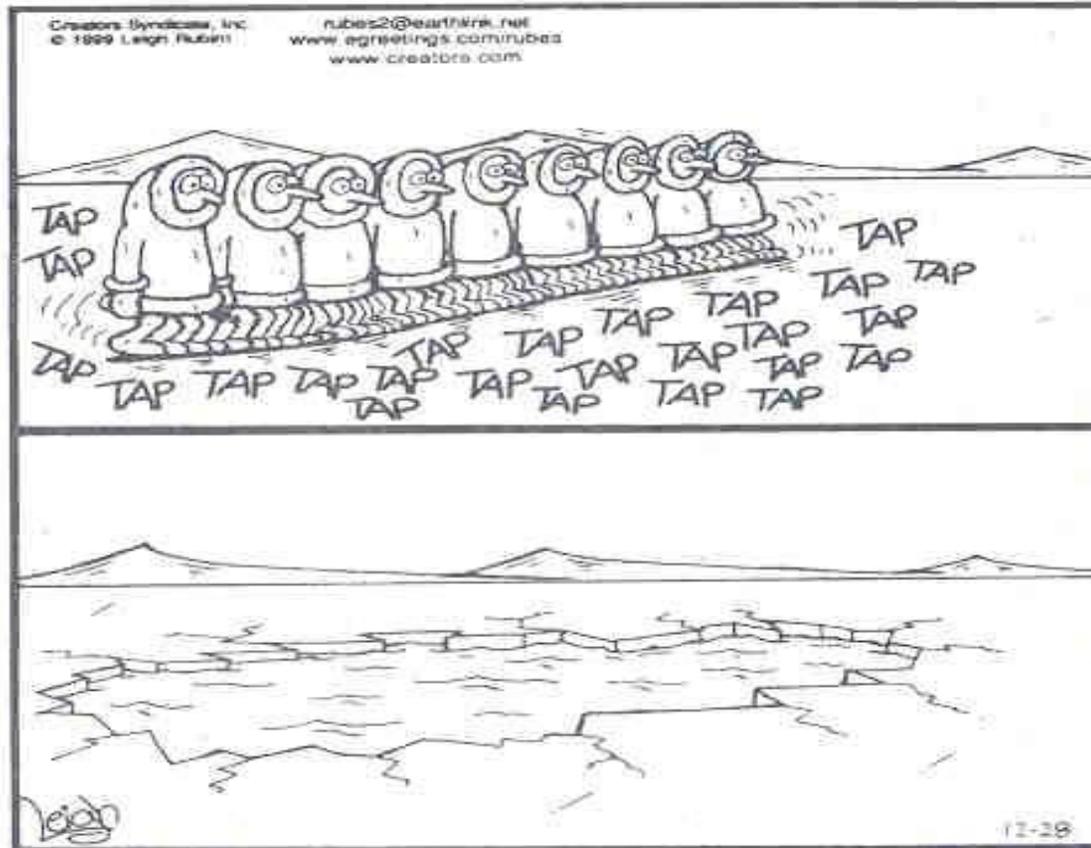




Consequences of an Iceless Arctic



RUBES



Riverdance ends its Arctic run ... minus the usual encore.